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The Impact Of Culture On Training Methods And Computer Self-Efficacy

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ABSTRACT

The study presents an initial effort to examine the impact of culture on training methods to increase individual's computer self-efficacy. Specifically, the study proposes that training will help increasing computer self-efficacy. The relationship between training and computer self-efficacy, however, will be moderated by culture, which is viewed as individual values that a person holds. We have derived three formal hypotheses from this framework, discussed relevant issues in explaining key variables, and specified implications for future research and management practice.

Keywords

User-training, Computer self-efficacy, Culture, Individualism and collectivism, Training method

INTRODUCTION

User training is widely recognized as one of the key factors in the productive use of computer systems. Given the started importance of computer related training, several studies have examined the types of training that are most effective or the process issues involved in training (Bostrom, Olfman, & Sein, 1990; Olfman & Bostrom, 1991; and Compeau & Higgins, 1995).

Within this literature, one stream of research has examined the role of training programs in increasing computer self-efficacy among end-users (Compeau & Higgins, 1995a). Moreover, there has been renewed interest in the influence of individual differences on the diffusion of information technology in the workplace. While a great deal of research has been conducted on the relationship between individual differences and the use of information technology, a fundamental yet unexplored dimension of individual differences--the role of cultural values that people hold--has not been examined.

This study continues the stream of research between training and computer self-efficacy at a micro-level of analysis by including the influence of one of the most useful and powerful dimensions of culture—individualism and collectivism—as a moderator to the relationship. It is proposed here that training methods will increase the level of individual's computer self-efficacy and that the level of computer self-efficacy will be moderated by the cultural orientation (individualism vs. collectivism).

LITERATURE REVIEW

Computer Self-efficacy

Bandura (1977) conceptualizes self-efficacy as one's belief in one's capacity to orchestrate performance on a given task. As academic attention to the self-efficacy construct has increased, interest in specific types of self-efficacy, including computer self-efficacy has emerged. Computer self-efficacy refers to a judgment of one's capability to use a computer in the accomplishment of a task (Compeau & Higgins, 1995b). This construct has been positively related to performance in software, academic performance in introductory MIS classes, and adaptability to new computing technologies (Garner & Rozell, 2000).

Given that computer self-efficacy represents a comprehensive judgment of one's ability to perform a task (Compeau & Higgins, 1995b), it is a dynamic trait that can be changed by factors such as the training programs, a change of environment settings, the change of task complexity and so on.

Culture: Individualism and Collectivism

In this study, we utilize one of the four dimensions of culture identified by Hofstede's (1980)'s in investigating the relationship: individualism and collectivism. An individualist focuses on self-sufficiency, control, and the pursuit of individual goals that may or may not be consistent with in-groups. They are proud of their own accomplishments and derive satisfaction from performance based on their own achievements. As a result, individualists show emotional independence from organizations and value autonomy and individual security earned solely by them.

In contrast, a collectivist places his or her own identity on the social system and his or her own belief is based on in-group decisions. Consequently, emotional dependence of collectivists on organizations and institutions is strong, emphasizing non-instrumental involvement with organizations. As a result, individuals with collectivistic values prefer group-based activities and are willing to take orders from leaders of groups to which they belong. They seek improvement because of the gains their group may receive.

Computer Training

The literature has identified training as a significant factor in the success of decision support systems, strategic innovation, and system implementation. In this study, we focus on two training methods that have been the most typical categories of training program (Compeau & Higgins, 1995; Lim, et al 1997).

Lecture-based Training

This term has been characterized as the situation when the entire content of what is to be learned is presented to the learner in final form (Simon et al., 1996). This method offers a traditional approach that is widely accepted and understood. The technique allows the instructors to deal with any questions or problems that may rise and to give individual attention as needed. Additionally, lecture-based training helps minimize incorrect responses while allowing students to apply rules more quickly (Simon, et al. 1996). Overall, the literature suggests that the lecture-based training should be superior for retention of information as compared to exploratory training in courses that teach primarily rule or general tasks.

Exploratory training

Glaser (1966) describes exploratory learning as a process by which individuals are given the freedom to implement their own structures on learning. Several researchers have suggested that exploratory training helps students organize information, making it more readily available for later application or problem-solving. They further suggested that this method motivates, as compared to lecture-based training. This implies that the individual becomes more self-motivated to solve problems in an independent fashion.

RESEARCH FRAMEWORK AND HYPOTHESES

The proposed relationship begins with the argument that either type of training will increase self-efficacy more than no training at all. We further argue that the attempt to increase computer self-efficacy through training methods can be moderated by cultural differences that individually held by an employee. The research framework is presented in Figure 1 below.

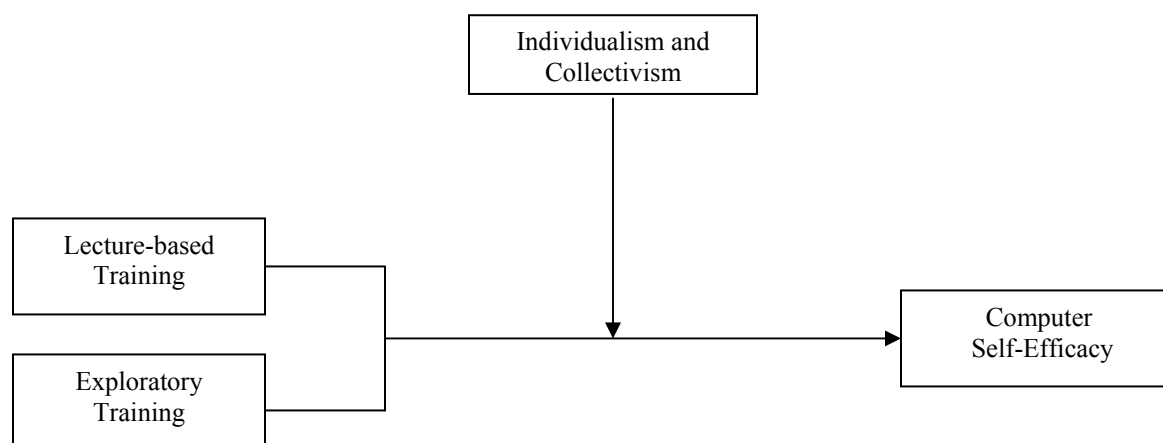


Figure 1

The relationship between training methods and computer self-efficacy, having culture as a moderator

Currently, computer training is widely recognized as an essential contributor to the productive use of computers in organizations. Several studies have demonstrated that training is positively related to success (Compeau & Higgins, 1995b; Henry & Stone, 1999; Garner & Rozell, 2000). Moreover, the practitioner literature also supports the view that training is essential to effective computer use (Simon et al, 1996).

Therefore, regardless of types of training method, a person should be able to increase his or her self-efficacy after receiving a training program. Thus, we suggest the following hypothesis:

Hypothesis 1: *Individuals who receive either type of training will have higher levels of computer self-efficacy than those who receive no training at all.*

By extending this logic to training in a cultural context, it is possible that the use of individual-based training such as interactive video as a training strategy may not be appropriate for collectivists because the method focuses on the individual; collectivists prefer to learn and work in teams. Marquardt and Kearsley (1999) argue that people with collectivistic minds feel more at ease learning by rote and prefer to observe the instructor demonstrating a skill rather than face the possibility of being seen as foolish through risk-taking and leaning-by-doing methodologies. They further state that collectivistic people are accustomed to lecture and note-taking, and that learners attempt to soak up the information like sponges and feed it back verbatim.

On the other hand, people who hold individualistic minds prefer training methods that are more self-centered and emphasize personal capability. Self-exploratory method will allow them to individually interact with material. Rather than taking notes and listening to the instructor, they prefer to learn by doing, thinking, and knowing on their own.

Depending on cultural values that a person is holding on his or her mind, specific training methods may be effective or ineffective. Therefore, selecting appropriate training approaches according to values that a person holds is critical. The above arguments suggest the following hypotheses:

Hypothesis 2a: *Individual with collectivistic mind who receive lecture-based training are likely to have higher computer self-efficacy than individuals with collectivistic mind who receive exploratory training.*

Hypothesis 2b: *Individuals with individualistic mind who receive exploratory training are likely to have higher computer self-efficacy than individuals with individualistic mind who receive lecture-based training.*

METHODOLOGY

Design and Procedures

A 2*2 between-subjects design will be used, with the independent variables being two training methods and two cultural values. Subjects will be drawn from a pool of MBA and undergraduate students in a business school from a mid-western university. Using students as subjects is reasonable for three reasons. First, time and financial support are limited. Second, the MBA students hold a wide variety of ethnicity and nationality. Finally, since many of the students at the university are from lower and middle class families in nearby cities that can be described as agricultural-rural, collectivism can be expected. Singelis et al (1995) claim that people from either lower or middle classes or rural environments, tend to be collectivists.

A laboratory experiment will be used to test the hypotheses. In a computer lab, trainers will first introduce themselves, distribute and collect pre-test questionnaires. The pre-test questionnaire consists of demographic questions, computer self-efficacy, and the individualism and collectivism (INDCOL) questionnaire. Subjects will then be randomly assigned to one of the two treatments groups or the control group. After a four-hour training procedure on a certain type of software package (i.e., Microsoft Access for Windows) is completed, students will fill out a post-test questionnaire, which is the computer self-efficacy questionnaire, and then take first task performance test. The follow-up test will be a surprised test within two weeks. For the follow-up test, treatment groups will be reassembled and retested following the exact methodology and materials used in first task performance test.

Measures

Computer self-efficacy

The computer self-efficacy is measured by using the 10-item developed by Compeau and Higgins (1995b). It is a ten-point Likert-like scale (1-10), ranking from "not at all confident" to "totally confident".

Individualism and collectivism

Individualism and collectivism is assessed using the scale developed by Hui (1988). The scale is developed in attempting to measure an individual's degree of individualism and collectivism, rather than an ecological level, using the country mean. It is a six-point Likert-like scale (0-5), ranging from "strongly disagree/false" to "strongly agree/true".

Control variables

Individual learning style will be controlled in this study since it may affect subjects' perceptions and preferences in learning the software within a particular training situation. This may have the effect of decreasing the moderating influence of culture. The other variable is previous experience with the software package that we will use in the study. It may affect expected results because experienced subjects would complete task performance tests quicker and make fewer mistakes than the inexperienced ones.

CONCLUSION

This study focuses on computer self-efficacy and its relationship to training. Specifically, the study investigates the moderating effects of culture—individualism and collectivism—on the relationship.

The implications of this study are noteworthy for academics and practitioners alike. For academics, the results suggest that IT theories should attempt to account for cultural effects and other individual differences (i.e., gender and age) on IT constructs. Additionally, since individual learning style can yield a significant effect, future researchers may want to include this variable in the model to further examine whether people with different cultural values prefer different learning styles.

Perhaps the most significant finding from the study is that individualism and collectivism is relevant in understanding how training influences computer self-efficacy. Hence, an important implication for managers is that training methods should be congruent with a person's cultural background as well as with individual values. It also suggests that a manager should recognize intra-cultural variation as well. Within any given national boundary, there are many subcultures and many individual deviations within a given subculture. The managerial challenge arises from getting to know each employee's values and beliefs as they are shaped by culture and by individual values.

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